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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,421	03/16/2004	Jong-Ho Kim	8729-233 (SS-19618-US)	2051
22150	7590	02/22/2006	EXAMINER	
F. CHAU & ASSOCIATES, LLC 130 WOODBURY ROAD WOODBURY, NY 11797			GRIER, LAURA A	
			ART UNIT	PAPER NUMBER
			2644	

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/801,421

Applicant(s)

KIM ET AL.

Examiner

Laura A. Grier

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-17 and 19-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 44 is/are allowed.
- 6) ☒ Claim(s) 1,3-13,15-17,19-28 and 30-43 is/are rejected.
- 7) ☒ Claim(s) 14 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/22/05</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2644

DETAILED ACTION

1. The indicated allowability of claims 2, 8, 23, 33, 37 and 42 is withdrawn in view of the newly discovered reference(s) to U. S. Patent No. 4980920. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 31-32, 36, 38-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 31 recites the limitation "wherein the detector is an ultrasonic detector" in lines 11-

12. There is insufficient antecedent basis for this limitation in the claim.

Claim Objections

4. Claims 15 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The limitation of claim 15 is recited in claim 1, in which claim 3 depends..

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 16, 19-22, 25, 35 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshino.

Regarding claims 16, 37, 19 Yoshino et al. (herein, Yoshino) discloses an automatic sound field correcting device. Yoshino's disclosure comprises an amplifier (5) and (9) coupled to a speaker (6), which reads on an amplifier and speakers therein; a microphone (8), constitutes as detector as well and the sensed feedback information is used to determine position of the speakers based on a test signal generated via the signal processing circuit (2) and the measurement signal generator (3), which provides a pink noise signal - figures 1-5, and 7, paragraphs 0042-0043, 0046, 0048, 0062, and 0065.

Regarding claims 20-21, and 22, Yoshino discloses everything claimed as applied above (see claim 16). Yoshino discloses memory within the signal processing unit, wherein the collected data from the microphone is stored, such as memory 13c for the delay circuit (5C) and storing means for analyzing the speakers (0085); and wherein the use of the sound correcting system is implemented via the computer (paragraph 0096), inherently indicates a the memory as one of a register, DRAM, and a flash memory

Regarding claims 25, Yoshino discloses everything claimed as applied above (see claim 16). Yoshino discloses a microphone (8), which reads at least one sensor disposed proximal to at least one of speakers for sensing at least one environmental conditions, therein.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 1, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino in view of Noro et al. U. S. Patent No. 4980920.

Regarding claims 1, Yoshino discloses an automatic sound field correcting device. Yoshino's disclosure comprises an amplifier (5) and (9) coupled to a speaker (6), which reads on an amplifier and speakers therein; a microphone (8), which senses, and a signal processing circuit (2), which reads on a controller, therein – figures 1-5, paragraphs 0042-0043, 0046 and 0048. However, Yoshino fails to disclose a sensor for sensing temperature and/or humidity.

Regarding the sensor, in a similar field of endeavor, Noro et al. (herein, Noro) disclose a speaker apparatus with a temperature compensation circuit, which includes a sensor (6) that senses the temperature of the speaker (figure 2).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Yoshino by implementing a sensor that detects the

temperature of the speaker system for the purpose ensuring efficient function of the speaker by controlling the drive state of the speakers (col. 5, lines 45-68, col. 2, lines 53-62).

Regarding claim 17, Yoshino discloses everything claimed as applied above (see claim 16). However, Yoshino fails to disclose a sensor for sensing temperature and/or humidity.

Regarding the sensor, in a similar field of endeavor, Noro disclose a speaker apparatus with a temperature compensation circuit, which includes a sensor (6) that senses the temperature of the speaker (figure 2).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Yoshino by implementing a sensor that detects the temperature of the speaker system for the purpose ensuring efficient function of the speaker by controlling the drive state of the speakers (col. 5, lines 45-68, col. 2, lines 53-62).

9. Claims 8, 23, 26-27 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino.

Regarding claims 23, 43 and 27, Yoshino discloses an automatic sound field correcting device. Yoshino's disclosure comprises an amplifier (5) and (9) coupled to a speaker (6), which reads on an amplifier and speakers therein; a microphone (8), constitutes as detector as well and the sensed feedback information is used to determine position of the speakers based on a test signal generated via the signal processing circuit (2) and the measurement signal generator (3), which provides a pink noise signal - figures 1-5, and 7, paragraphs 0042-0043, 0046, 0048, 0062, and 0065. However, Yoshino fails to disclose the test signal being received by an ultrasonic detector.

The use of ultrasonic detectors for determining the position of an object was well known. Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Yoshino by using an ultrasonic detector for the purpose of determining the position of the loudspeakers.

Regarding claim 26, Yoshino discloses everything claimed as applied above (see claim 16). Yoshino discloses further discloses wireless transmission of the test signal. The use of wireless transmission of audio signal was well known in the art and would have been obvious to one of the ordinary skill in the art at the invention was made to modify the invention by implementing wireless transmission technique for the purpose efficient and convenient audio transmission.

10. Claims 8 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino and Noro.

Regarding claim 8, Yoshino discloses everything claimed as applied above (see claim 1). However, Yoshino fails to disclose the test signal being received by an ultrasonic detector. The use of ultrasonic detectors for determining the position of an object was well known. Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Yoshino by using an ultrasonic detector for the purpose of determining the position of the loudspeakers.

Regarding claim 30, Yoshino discloses everything claimed as applied above (see claim 23).

However, Yoshino fails to disclose a sensor for sensing temperature and/or humidity.

Regarding the sensor, in a similar field of endeavor, Noro disclose a speaker apparatus with a temperature compensation circuit, which includes a sensor (6) that senses the temperature of the speaker (figure 2).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Yoshino by implementing a sensor that detects the temperature of the speaker system for the purpose ensuring efficient function of the speaker by controlling the drive state of the speakers (col. 5, lines 45-68, col. 2, lines 53-62).

11. Claims 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino.

Regarding claim 33, Yoshino discloses everything claimed as applied above (see claim 1). However, Yoshino fails to disclose the test signal being received by an ultrasonic detector. The use of ultrasonic detectors for determining the position of an object was well known. Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Yoshino by using an ultrasonic detector for the purpose of determining the position of the loudspeakers.

12. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino in view of Pulfrey, U. S. Patent No. 5493620.

Regarding claim 28, Yoshino discloses everything claimed as applied above (see claim 23). However, Yoshino fails to disclose the detector/sensor disposed in each the speaker(s). Providing a detector or sensor in each speaker was well known in the art as taught Pulfrey, which discloses a high fidelity sound reproducing system comprising a measuring transducer (which constitutes as a speaker used as microphone – claims 9 and 10) which may be positioned on a

speaker, and the invention of Pulfrey further discloses that may be utilized in more than one speaker among a plurality of speakers (col. 3, lines 44-52, and abstract).

Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Yoshino by disposing a detector in each speaker for the purpose enhancing the performance and enabling efficient sound correction of all the individual speakers for optimal sound quality.

13. **Claims 3-7, 9-13 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino and Noro in view of Pulfrey, U. S. Patent No. 5493620.

Regarding claims 3, 9-10, 12 and 15, Yoshino and Noro disclose everything claimed as applied above (see claim 1). Yoshino and Noro (Yoshino) further, the microphone (8) constitutes as detector as well and the sensed feedback information is used to determine position of the speakers based on a test signal generated via the signal processing circuit (2) and the measurement signal generator (3), which provides a pink noise signal - figures 1-5, and 7, paragraphs 0042-0043, 0046, 0048, 0062, and 0065. However, Yoshino and Noro fails to disclose the detector/sensor disposed in each the speaker(s). Providing a detector or sensor in each speaker was well known in the art as taught Pulfrey, which discloses a high fidelity sound reproducing system comprising a measuring transducer (which constitutes as a speaker used as microphone – claims 9 and 10) which may be positioned on a speaker, and the invention of Pulfrey further discloses that may be utilized in more than one speaker among a plurality of speakers (col. 3, lines 44-52, and abstract).

Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Yoshino and Noro by disposing a detector in each

speaker for the purpose enhancing the performance and enabling efficient sound correction of all the individual speakers for optimal sound quality.

Regarding **claim 4**, Yoshino and Noro and Pulfrey (Yoshino combination) disclose everything claimed as applied above (see claim 3). Yoshino's signal processing unit (2), of Yoshino combination, reads on the controller generating compensation data for adjusting the play signal, therein – paragraphs 0046 – 0048, 0062.

Regarding **claims 5-6, and 7**, respectively, Yoshino combination discloses everything claimed as applied above (see claim 4 and 5, respectively). Yoshino combination (Yoshino) discloses memory within the signal processing unit, wherein the collected data from the microphone is stored, such as memory 13c for the delay circuit (5C) and storing means for analyzing the speakers (0085); and wherein the use of the sound correcting system is implemented via the computer (paragraph 0096), inherently indicates a the memory as one of a register, DRAM, and a flash memory.

Regarding **claim 11**, Yoshino combination discloses everything claimed as applied above (see claim 4 and 5, respectively). Yoshino combination (Yoshino) discloses an amplifier ((9) – figure 1) coupling to the input of the signal processing circuit (controller), which reads on the reported signal amplified by the amplifier prior the receipt the controller.

Regarding **claim 13**, it is rejected for the same reasons set forth in the rejection of claim 3.

14. **Claims 24 and 34** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino in view of Pulfrey.

Regarding claims 24 and 34, Yoshino discloses everything claimed as applied above (see claim 16 and 37, respectively). However, Yoshino fails to disclose the speaker as a microphone. Pulfrey discloses a high fidelity sound reproducing system comprising a measuring transducer (which constitutes as a speaker used as microphone) – col. 3, lines 44-52.

Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Yoshino by providing speaker used as microphone for the purpose of enabling of dual function transducer (which is a common practice in the art) and limiting the number of components and size of the structure.

15. Claim 44 is allowed.

16. Claims 14, and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments with respect to claims 1, 3-17, and 19-42 have been considered but are moot in view of the new ground(s) of rejection.


The applicant provides remarks in the respect the amended changes based upon previously objected to subject matter. However, upon further search, a new reference has been to provide a teaching of a sensor of a loudspeaker apparatus, wherein the sensor senses the temperature of the system, therein.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura A. Grier whose telephone number is (571) 272-7518. The examiner can normally be reached on Monday - Friday, 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Laura A Grier
Primary Examiner
Art Unit 2644

February 17, 2006